

Brunswick County Packaged Duplex Grinder Pump Station Specification:

1. **SCOPE:** Furnish and install a pre-assembled Duplex Stainless Steel PermaTrack Package as shown on the plans. The package shall consist of a fiberglass basin with aluminum cover, slide track assemblies, discharge piping and fittings, level controls, and control panel.

2. **PACKAGE DESIGN:** The basin diameter shall be 48 inches with a depth of 72 inches. Construction shall be custom molded fiberglass reinforced polyester resin with interior surface to be gel-coated from 10 to 20 mil thick 6 inches from the top and 6 inches from the bottom, to provide a smooth sealed surface. The wall thickness shall be sufficient to withstand a water-saturated sand load of 120 lbs per cubic foot with a safety factor of two at all depths. A 4 inch Uni-Seal fitting for inlet shall be furnished with a location of (To Be Determined) inches from the top of the basin to the inlet centerline. An anti-flotation collar shall be provided as an integral part of the basin assembly. The collar shall extend a minimum of three inches (3") from the bottom of the basin.

The basin cover shall be of aluminum construction and able to withstand 300 lbs per square foot loading capacity. Cover shall be diamond checkered plate design with a minimum thickness of three-eighths inch (3/8"), and shall have a minimum diameter four inches (4") greater than the basin interior diameter.

The aluminum door with stainless hinges shall be an integral part of the cover, and shall be supplied with locking provisions. The cover shall be securely mounted to the basin via stainless steel bolts threaded into stainless steel inserts molded onto the top collar of the basin. All hardware shall be stainless steel.

The Guide Track shall consist of 304 Stainless Steel C-channel for ease of pump removal.

The Pump Discharge Assemblies shall be provided with 1.25" or 2.0" Stainless Steel and shall not have any check valves that might impede the flow of the ground sewage. The check valve and ball valve shall be mounted in the discharge pipe in a Valve Box outside the basin for easy access. Others shall supply the valves and valve box. A hydraulic sealing flange shall seal against a stationary mating flange in the Slide Track and provide proper sealing, venting and quick removal of the pumps. Discharge components, which mount to the floor of the basin, will NOT be acceptable.

The upper guide brackets shall mount to the basin cover and position the upper end of the stainless Perma Track system, while the discharge pipe positions the lower end of the guide assembly.

The stainless track shall suspend the pump at a distance of four inches (4") from the basin floor. The use of bottom mounted rails, studs, discharge fittings or supports, which can impede flow of materials into the pump, shall not be acceptable.

Stainless steel upper and lower guide brackets shall be attached to the pump for positioning on the track during installation or removal.

The stationary portion of the guide track assembly shall consist of a 304 stainless steel, 2" stub end welded to the stainless steel track. This stub end shall then extend to outside the basin wall via 2" schedule 40 stainless steel pipe through a 2" Uni-Seal pipefitting. Outside the basin wall, this piping shall terminate in a male threaded, schedule 40, and 2" stainless steel pipe.

A stainless steel lifting cable with a minimum breaking strength of 2100 pounds shall be provided for installation and removal of pumps.

The basin shall have integral Stainless Steel lifting lugs as shown on the drawing permanently mounted to the side of the basin approximately 1 Ft. from the top and at 180 degrees of each other to facilitate lifting the basin during installation. "Eye" bolts screwed into the basin top or any other means of lifting will NOT be acceptable.

The float switches shall be suspended from a stainless steel bracket. Non-metallic cord grips shall be used for ease of adjustment and to hold the switches at the desired elevation.

A 1.25" or 2.0" Stainless Steel Conduit Hub shall be an integral part the basin. The hub shall extend through the basin and shall be provided with an NPT threaded female connector. The hub shall be mounted to the basin by means of a 4 bolt Stainless Steel Plate and sealed to prevent any leakage.

Complete packaged pump station including pumps, basin, cover, stainless guide assembly, discharge pipe and fittings, check valves, level controls, and control panel shall be PermaTrack model number _____ as shown in the plans.

The PermaTrack Grinder Pump System can be sourced from Pumps, Parts & Service, Inc. in Charlotte, NC.

The telephone number is (888) 254-2815 or (704) 588-6250.



Pumps, Parts & Service
9325 Forsyth Park Drive
Charlotte, North Carolina
28273

(P) 800-275-4786
(F) 704-588-6258

SUBMITTAL DATA

PROJECT: Brunswick County

LOCATION: Brunswick County, NC

SUBJECT: PermaTrack Grinder Pump Lift Stations

DESCRIPTION:

Duplex PermaTrack Grinder Pump Lift Stations Featuring Barnes OmniGrind
Plus Grinder Pumps-Commercial Applications

June 23, 2005

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Limited 2 Year Warranty

We warrant that products of our manufacture will be free of defects in material and workmanship under normal use and service for twenty-four (24) months after notice of owner's acceptance, but no greater than twenty-seven (27) months after receipt of shipment, when installed and maintained in accordance with our instructions. This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, F.O.B. POINT OF MANUFACTURE OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.** Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on a product manufactured by us, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. **RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSES AND EVALUATIONS WE CONDUCT WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.**

This warranty shall not apply when damage is caused by (a) improper installation, (b) improper voltage (c) lightning (d) excessive sand or other abrasive material (e) scale or corrosion build-up due to excessive chemical content. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. **UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

Pump Model: _____ Job Name: _____
Sales Order No. _____ Barnes Representative: _____

CRANE

PUMPS & SYSTEMS

420 Third Street/P.O. Box 603
Piqua, Ohio 45356-0603
Phone: (937) 778-8947
Fax: (937) 773-7157
www.cranepumps.com

83 West Drive, Bramton
Ontario, Canada L6T 2J6
Phone: (905) 457-6223
Fax: (905) 457-2650

SCOPE: Furnish and install a preassembled Duplex Stainless Steel PermaTrack Package as shown on the plans. The package shall consist of a fiberglass basin with aluminum cover, slide track assemblies, discharge piping and fittings, check valves, junction box, level controls, and control panel.

PACKAGE DESIGN: The basin diameter shall be 48" inches with a depth of 54" inches. Construction shall be custom molded fiberglass reinforced polyester resin with interior surface to be gel-coated from 10 to 20 mil thick 6 inches from the top and 6 inches from the bottom, to provide a smooth sealed surface. The wall thickness shall be sufficient to withstand a water-saturated sand load of 120 lbs per cubic foot with a safety factor of two at all depths. A 4" inch SST, cast iron, or Uni-Seal fitting for inlet shall be furnished with a location of 6" inches from the top of the basin to the inlet centerline. An anti-flotation collar shall be provided as an integral part of the basin assembly. The collar shall extend a minimum of three inches (3") on the radius of the basin.

The basin cover shall be of aluminum construction and able to withstand 300 lbs per square foot loading capacity. Cover shall be diamond checkered plate design with a minimum thickness of three-eighths inch (3/8"), and shall have a minimum diameter four inches (4") greater than the basin interior diameter.

The aluminum door with stainless hinges shall be an integral part of the cover, and shall be supplied with locking provisions. The cover shall be securely mounted to the basin via stainless steel bolts threaded into stainless steel inserts molded onto the top collar of the basin. All hardware shall be stainless steel.

The guide track assemblies shall consist of 304 stainless steel upper guide rail brackets and pump guide brackets with the slide track assemblies of 12 gauge 304 stainless steel. The hydraulically sealed discharge coupling shall consist of a moveable and a stationary portion. The moveable portion of this assembly, when in position, shall be held against the stationary fitting by the construction of the stainless steel track. This track shall align the moveable fitting and flexible diaphragm to the stationary fitting to ensure proper sealing of the two surfaces.

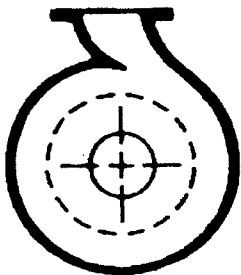
The upper guide brackets shall mount to the basin cover and position the upper end of the stainless Perma Track system, while the discharge pipe positions the lower end of the guide assembly.

The stainless track shall suspend the pump at a distance of four inches (4") from the basin floor. The use of bottom mounted rails, studs, or supports which can impede flow of materials into the pump, shall not be acceptable.

Stainless steel upper and lower guide brackets shall be attached to the pump for positioning on the track during installation or removal.

The stationary portion of the guide track assembly shall consist of a 304 stainless steel, 2" stub end welded to the stainless steel track. This stub end shall then extend to outside the basin wall via 2" schedule 40 stainless steel pipe through a 2" uniseal pipe fitting. Outside the basin wall, this piping shall terminate in a male threaded, schedule 40, 2" stainless steel pipe.

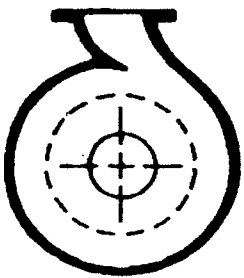
A stainless steel lifting cable with a minimum breaking strength of 2100 pounds shall be provided for installation and removal of pumps.



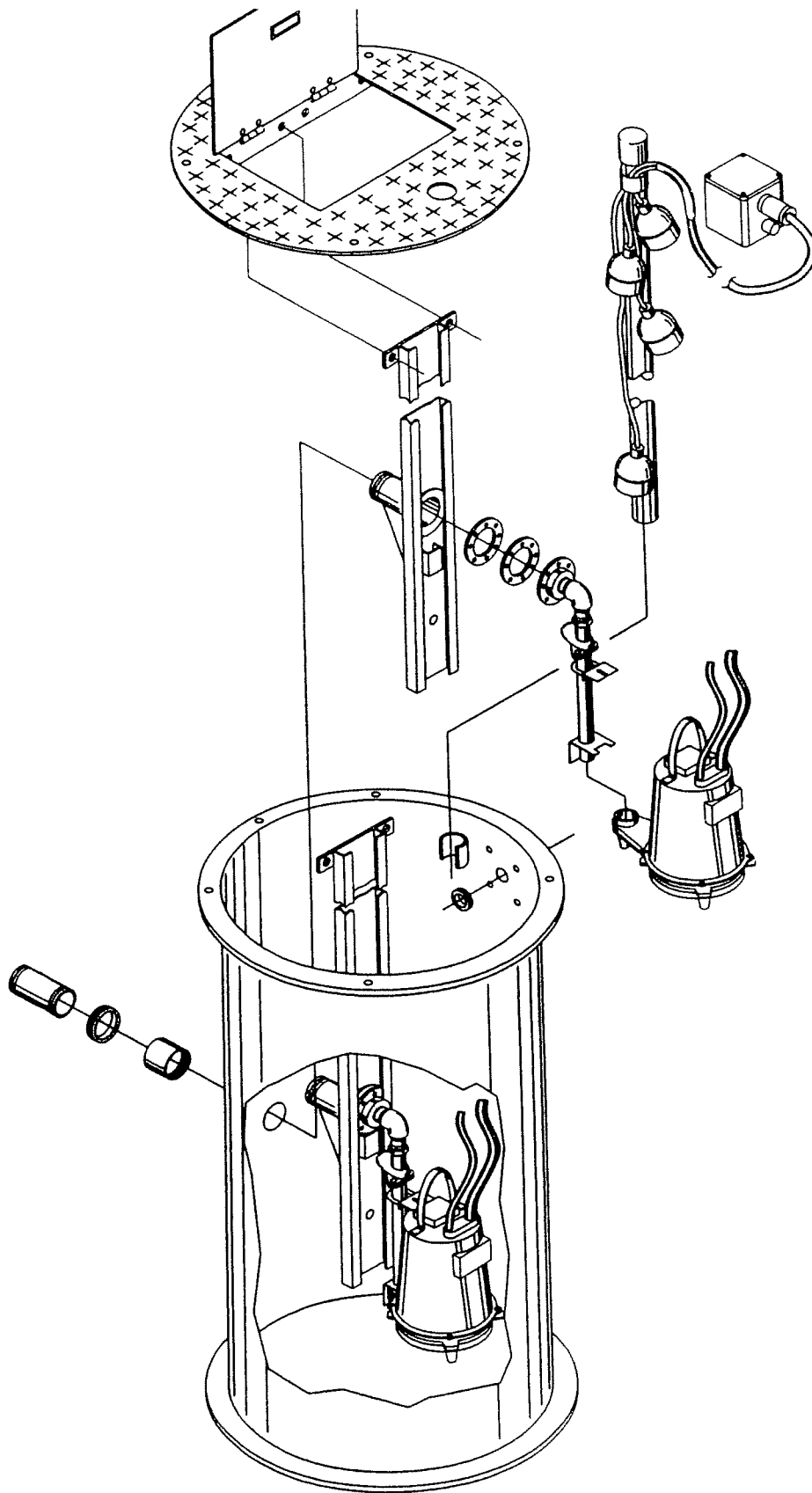
Pumps, Parts & Service, Inc.
9325 Forsyth Park Drive
Charlotte, NC 28241
Phone: 704-588-6250
Fax: 704-588-6258

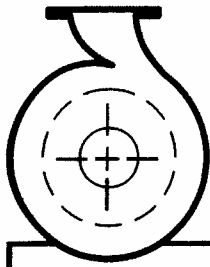
A ball check valve shall be installed in the vertical position between the pump discharge and the moveable fitting. The valve shall consist of three major components: body, flange, & ball. The design of the valve shall be such that it keeps solids, stringy material, grit, rags, etc. moving without the need for back flushing. In operation, the ball shall not impeded flow through the valve. The operating flow area shall be equal to the nominal size of the valve. The ball shall clear the waterway providing "full flow" equal to the normal size. It shall be non-clog in design. There shall not be outside levers, weights, springs, dash pots or other accessories required for a swing (clapper) type check valve. The ball shall be natural rubber and be resistant to material normally found in sewage. The body and flange shall be grey cast iron, ASTM Class 30. All fasteners shall be stainless steel. Inlet and outlet ports shall be 2" inch NPT threaded.

Complete packaged pump station including pumps, basin, cover, stainless guide assembly, discharge pipe and fittings, check valves, junction box, level controls, and control panel shall be PermaTrack model number PPS48X54DT as shown in the plans.



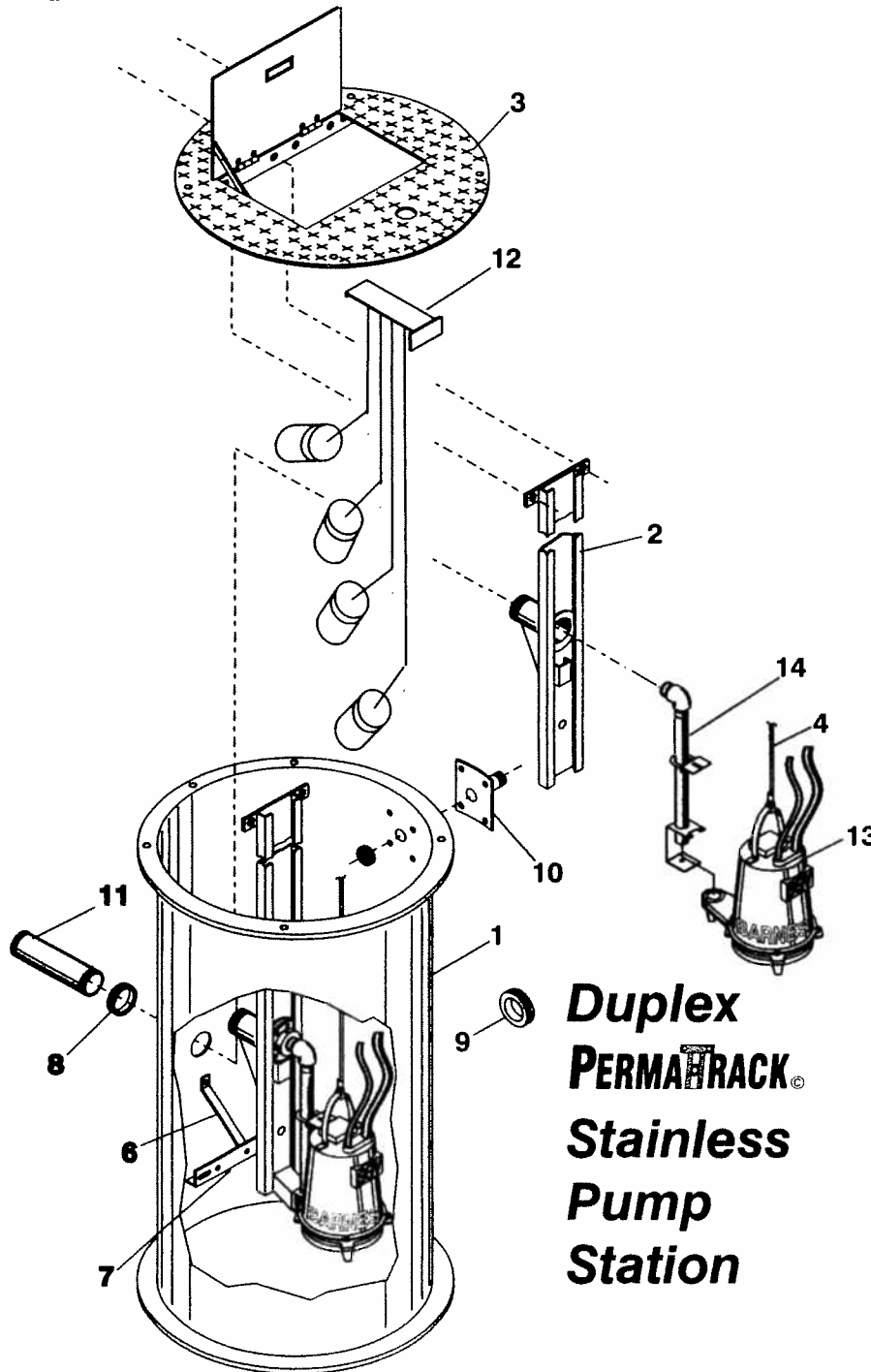
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9325 Forsyth Park Drive
Charlotte, NC 28241
Phone: 704-588-625
Fax: 704-588-6258





Pumps, Parts & Service, Inc.

Post Office Box 7788 Charlotte, NC 28241 Phone (704) 588-6250



- 1 FIBERGLASS BASIN WITH ANTIFLOAT COLLAR
- 2 **PERMA TRACK** STAINLESS STEEL GUIDE TRACK
- 3 ALUMINUM COVER WITH ACCESS DOOR
- 4 STAINLESS STEEL LIFTING CABLE
- 6 STAINLESS STEEL SUPPORT BRACKET
- 7 HORIZONTAL STABILIZER BAR
- 8 2" UNISEAL
- 9 4" UNISEAL (SHIPPED LOOSE)
- 10 SST CONDUIT HUB
- 11 SST DISCHARGE PIPE
- 12 4 FLOAT SWITCHES
- 13 BARNES SUBMERSIBLE GRINDER PUMP
- 14 DISCHARGE ASSEMBLY

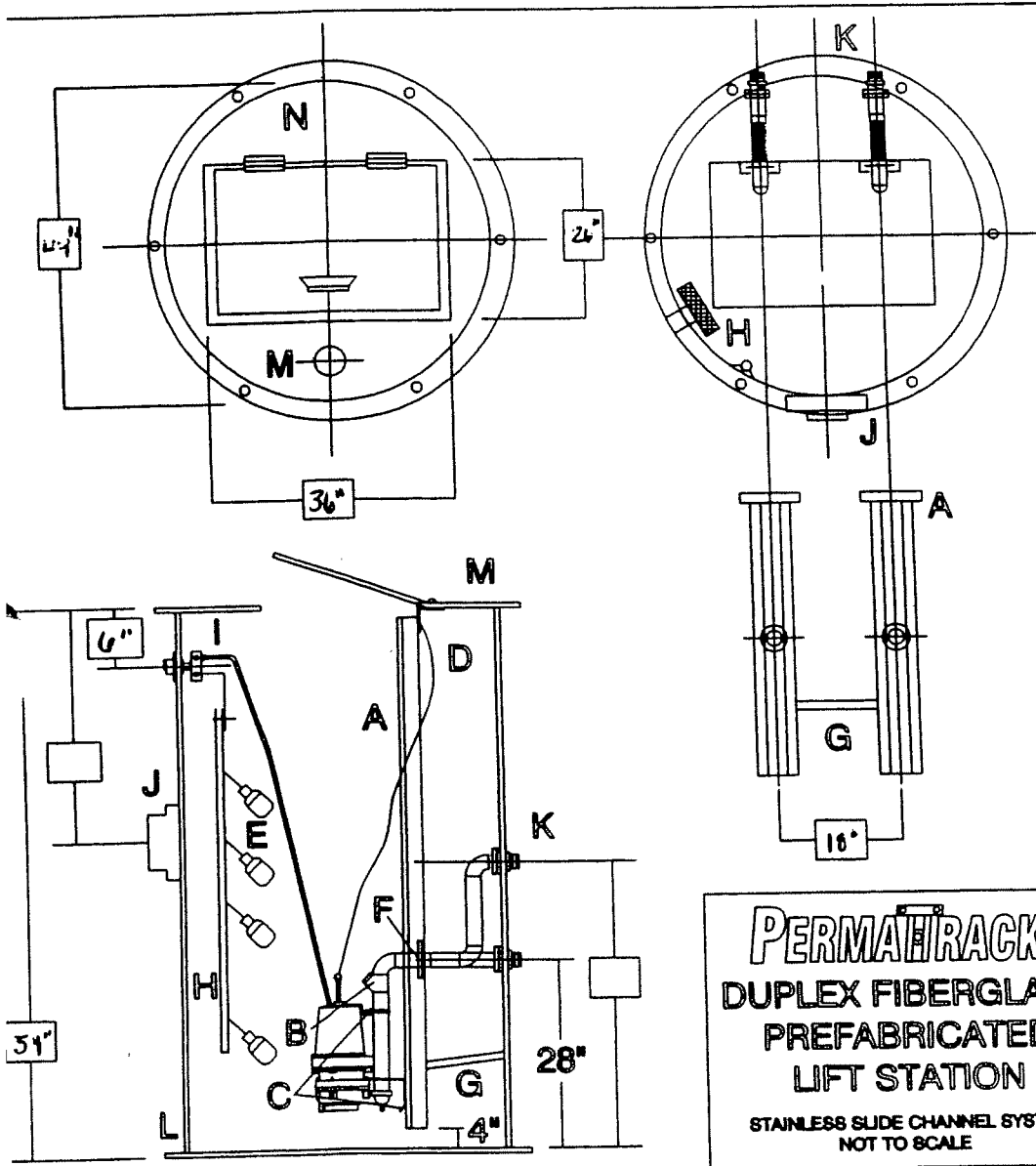
Duplex **PERMA TRACK** Stainless Pump Station

For:

Title: Typical Duplex Installation

Date:

Job#:



CHECK APPLICABLE BOXES
CIRCLE CHOICES
FILL IN THE BLANKS

- A ☐ SS SLIDE CHANNEL
- B ☐ _____ BALL CHECK VALVE
- C ☐ SS PUMP MOUNTING BRACKETS
- D ☐ SS PUMP LIFTING CABLE
- E ☐ MERCURY LEVEL CONTROLS
- F ☐ DISCHARGE SEALING DIAPHRAGM
- G ☐ SS CHANNEL STABILIZER
- H ☐ PVC OR SS OR PG FLOAT POLE
- I ☐ _____ CONDUIT _____ J-BOX
- J ☐ UNSEAL OR CAST IRON INLET HUB
- K ☐ STEEL OR SS DISCHARGE COUPLING
- L ☐ PG OR STEEL ANTIFLOATATION FLANGE
- M ☐ UNSEAL OR CAST IRON VERT FLANGE
- N ☐ ALUMINUM, STEEL, OR SOLID FIBERGLASS COVER

UTILIZING BARNES MODEL
SGV
SUBMERSIBLE GRINDER PUMPS

PERMA-TRACK
DUPLEX FIBERGLASS
PREFABRICATED
LIFT STATION
 STAINLESS SLIDE CHANNEL SYSTEM
 NOT TO SCALE

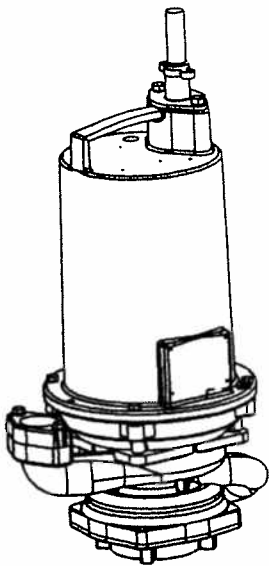


**Pumps,
Parts &
Service, Inc**

Post Office Box 7788
Charlotte, NC 28241
Phone (704) 586-6250

JOB REF:	SUBMITTED BY:	APPROVED BY:
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Submersible Grinder Pumps



Series: OGP
2HP, 3450RPM, 60Hz



omni
GRIND^{plus}
GRINDER PUMPS



CSA 108 - File No. LR16567
UL 778

Sample Specifications: Section 3 Page 10.

DESCRIPTION:

THE GRINDER PUMP IS DESIGNED TO
REDUCE DOMESTIC SEWAGE TO A FINELY
GROUND SLURRY.

Specifications:

DISCHARGE	1 1/4" NPT, Vertical, Bolt-on Flange
LIQUID TEMPERATURE	104°F (40°C) Continuous
VOLUTE	Cast Iron ASTM A-48, Class 30
MOTOR HOUSING	Cast Iron ASTM A-48, Class 30
SEAL PLATE	Cast Iron ASTM A-48, Class 30
IMPELLERS: Design.....	12 Vane, Vortex, With Pump Out Vanes On Back Side. Dynamically Balanced, ISO G6.3.
Material	85-5-5-5 Bronze
IMPELLER SPACER.....	300 Series Stainless Steel
SHREDDING RING	Hardened 440C Stainless Steel Rockwell® C-55.
CUTTER	Hardened 440C Stainless Steel, Rockwell® C-55.
SHAFT	416 Stainless Steel
SQUARE RINGS	Buna-N
HARDWARE	300 Series Stainless Steel
PAINT	Air Dry Enamel.
SEAL: Design	Single Mechanical
Material	Rotating Faces - Silicon-Carbide Stationary Faces - Silicon-Carbide Elastomer - Buna-N Hardware - 300 Series Stainless
CORD ENTRY	15 ft. (4.5m) Std. Cord. Custom Molded Quick Connect, for Sealing and Strain Relief
CORD Manual	CSA/UL Approved 12/3 Type SOW
UPPER BEARING:	
Design	Single Row, Angular contact Ball
Lubrication	Oil
Load	Radial & Thrust
LOWER BEARING:	
Design	Single Row, Angular contact Ball
Lubrication	Oil
Load	Radial & Thrust
MOTOR: Design	NEMA L-Single Phase Torque Curve, Oil-Filled, Squirrel Cage Induction
Insulation	Class F
SINGLE PHASE.....	Capacitor Start/Capacitor Run.
OPTIONAL EQUIPMENT.....	Cord Length, Moveable Fitting

SECTION 3B
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DATE 11/03

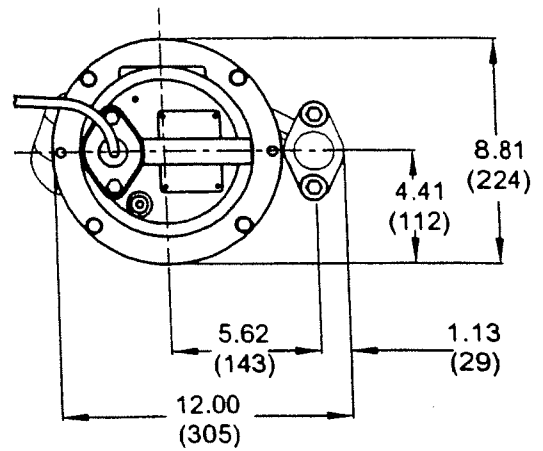
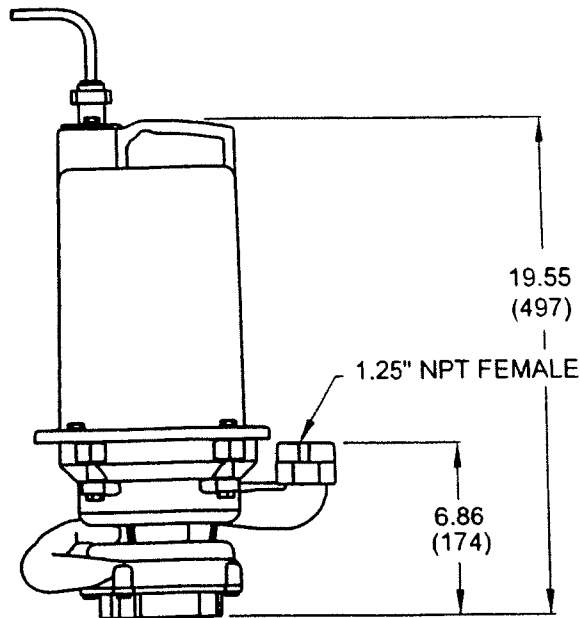
CRANE

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Submersible Grinder Pumps



MODEL NO	PART NO	HP	VOLT	PH/Hz	RPM (Nom)	NEMA START CODE	FULL LOAD AMPS	LOCKED ROTOR AMPS	CORD SIZE	CORD TYPE	CORD O.D. ± .02 (.5) in (mm)
OGP2022L	115328	2	240	1 / 60	3450	H	16.5	53.8	12/3	SOW	.61 (15.5)

IMPORTANT !

- 1.) PUMP MAY BE OPERATED "DRY" FOR EXTENDED PERIODS WITHOUT DAMAGE TO MOTOR AND/OR SEALS.
- 2.) THIS PUMP IS APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION II HAZARDOUS LOCATIONS.
- 3.) THIS PUMP IS NOT APPROPRIATE FOR THOSE APPLICATIONS SPECIFIED AS CLASS I DIVISION I HAZARDOUS LOCATIONS.
- 4.) INSTALLATIONS SUCH AS DECORATIVE FOUNTAINS OR WATER FEATURES PROVIDED FOR VISUAL ENJOYMENT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE ANSI/NFPA 70 AND/OR THE AUTHORITY HAVING JURISDICTION. THIS PUMP IS NOT INTENDED FOR USE IN SWIMMING POOLS, RECREATIONAL WATER PARKS, OR INSTALLATIONS IN WHICH HUMAN CONTACT WITH PUMPED MEDIA IS A COMMON OCCURRENCE.

CRANE

A Crane Co. Company

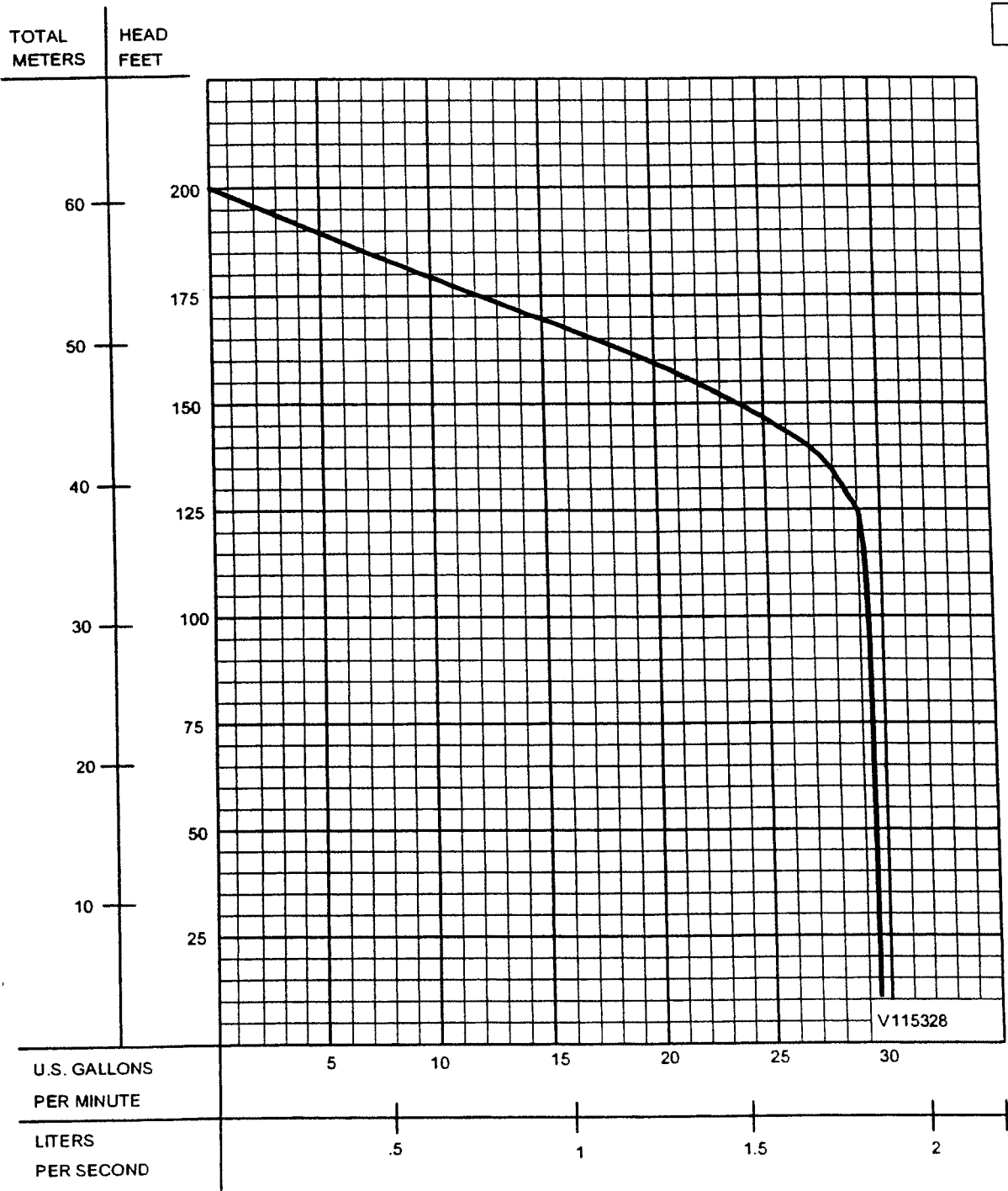
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SECTION 3B
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Submersible Grinder Pumps

inches
(mm)



Testing is performed with water, specific gravity 1.0 @ 68° F @ (20°C), other fluids may vary performance

omni GRINDTM *plus*⁺

CENTRIFUGAL GRINDER PUMPS

The Omni Grind Plus provides heads up to 200' and flows to 28gpm. With the high head capabilities of a progressive cavity pump and the long life of Barnes centrifugal grinder pumps, the Omni Grind Plus is truly a universal grinder pump for single family residents.

Superior Performance

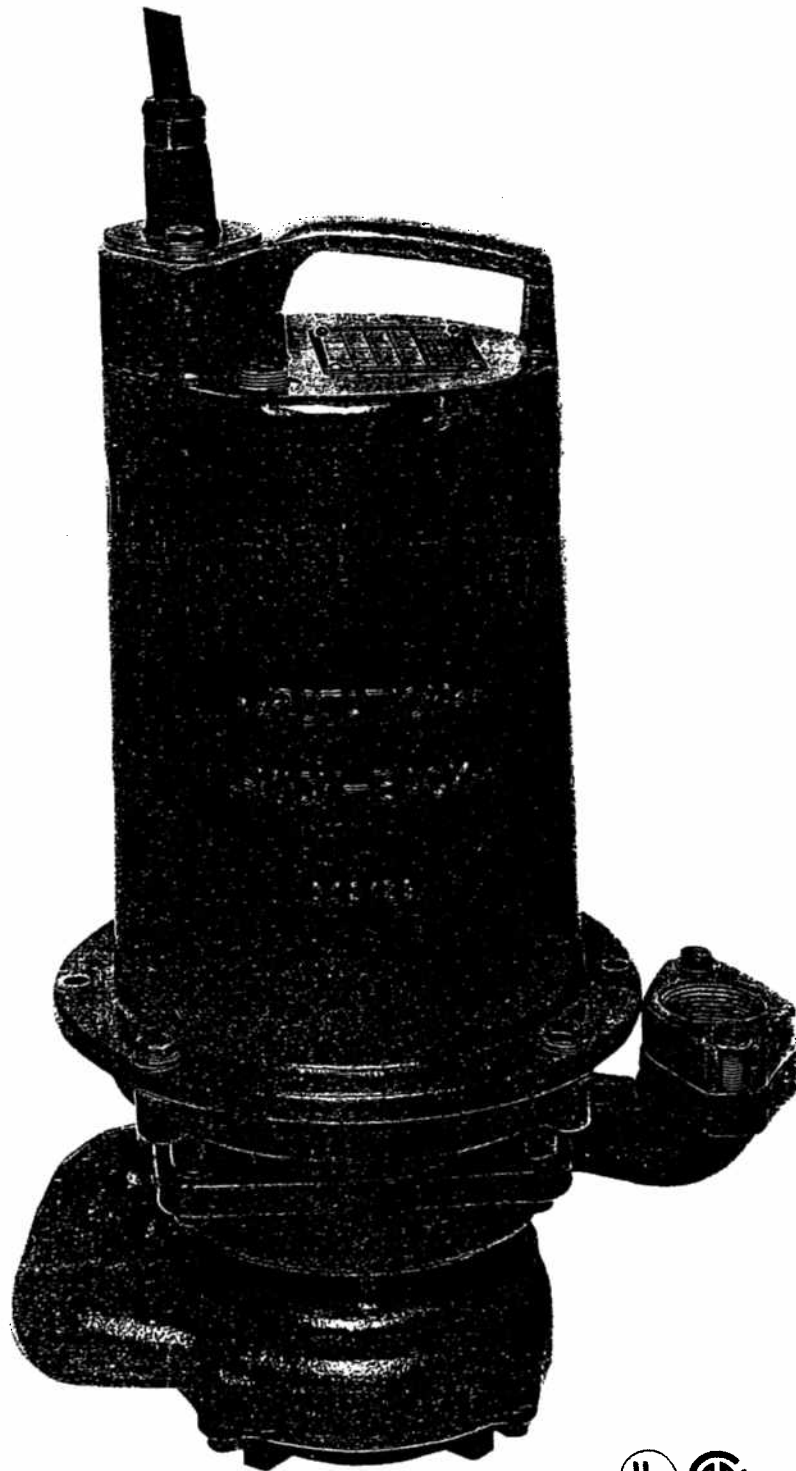
- Two stage pump design provides high head capability
- Installed with the Barnes ESPS, (Environmentally Sealed Pressure Switch) problems with grease build up are nonexistent
- Start and run capacitors are located in the motor housing so no expensive control panel required
- UL and CSA listed to assure quality and electrical safety
- 1 1/4" NPT vertical connection in removable discharge flange makes installation a breeze

Long Life

- Centrifugal grinder pumps recognized for reliable and trouble free operation
- Recessed impeller creates a vortex action for minimal component wear
- Two stage design allows pump to run continuously at high or low heads
- 100,000 hour L-10 rated angular contact bearing easily handles any pump load
- Silicon carbide, single mechanical seals hold up to damaging grit
- Oil filled motor for superior cooling
- Built in, automatic resetting overload protection extends motor life
- Exclusive Slicerator has superior grinding action which eliminates jams

Efficient

- Hydraulic performance superior to 1hp PC pump
WITH COMPARABLE POWER CONSUMPTION



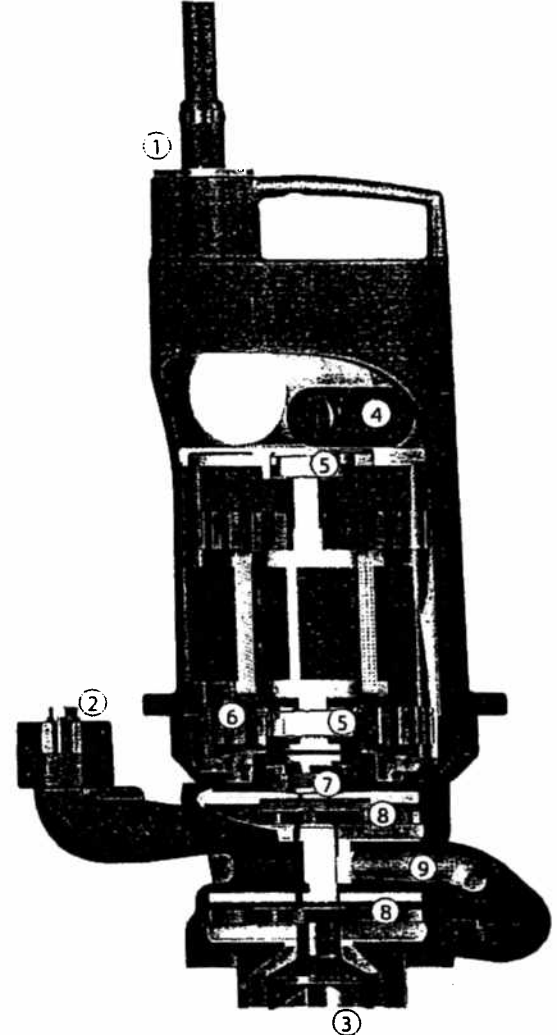
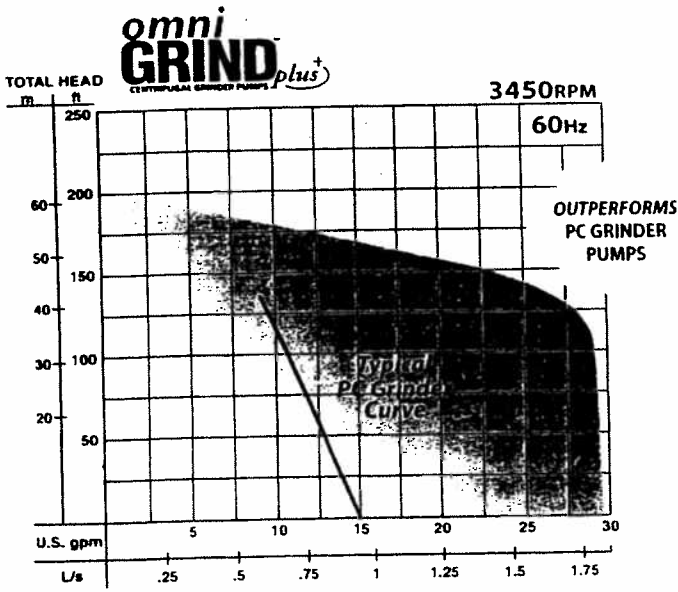
Patent Pending



US

Exclusive Slicerator™

The staggered slicing action of the grinder radial cutter dramatically reduces the torque requirement of the motor, cuts with less horsepower, and increases the unit's efficiency. Eliminates clogging with particularly troublesome objects such as plastic, rubber, sanitary napkins, disposable diapers and cloth items.



Omni Grind Plus Features

1. Quick disconnect cord
2. Threaded discharge flange
3. Exclusive Slicerator
4. Integral capacitors for start and run
5. Angular contact bearings 100,000 hour L-10 rating
6. Oil filled motor with overload protection
7. Silicon carbide mechanical seal for long life
8. Vortex impellers for solids handling
9. Interstage passage



PUMPS & SYSTEMS

For more information contact your Barnes Pump Representative

Crane Pumps & Systems
420 Third Street
Piqua, Ohio 45356
(937) 778-8947
Fax (937) 773-7157
www.cranepumps.com

Crane Pumps & Systems
1485 Lexington Avenue
Mansfield, Ohio 44907
(937) 778-8947
Fax (419) 774-1530

Crane Pumps & Systems Canada
83 West Drive
Brampton, Ont. Canada L6T 2J6
(906) 457-6223
Fax (906) 457-2650